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Case report

Sub-serosal necrosis of the colon in acute pancreatitis

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As the treatment of acute pancreatitis is mainly conservative, the incidence of colonic involvement following this condition is unknown. Rarely, complications of stenosis, necrosis and fistula formation arise. We report a case in which torrential venous haemorrhage occurring three days after the onset of traumatic pancreatitis necessitated laparotomy. At operation a right hemicolectomy was performed, as her ascending and transverse colon appeared necrotic. Histologically the necrotic process was limited to the sub-serosal layer of the bowel.

Case History. A 29-year-old female was admitted with a three-day history of severe abdominal pain following a blow to the upper abdomen received during the course of a domestic argument. On examination she was shocked, pulse 140 per minute and blood pressure 95/60 mmHg. Marked abdominal distension was present with generalised guarding and rebound. Bowel sounds were absent. Her white cell count was 2,200 per 100 ml and serum amylase 1200 Somygi units. Erect X-ray of the abdomen revealed a distended proximal colon and a 'sentinel loop' adjacent to the pancreas. Free fluid was evident in the pelvic cavity. A diagnosis of acute pancreatitis was made.

Despite conservative treatment, the degree of shock increased and laparotomy was undertaken. A haemoperitoneum in excess of one litre due to haemorrhage from a vein in the lesser omentum was found, and the vein ligated. The surrounding tissues were grossly thickened and inflamed due to reaction from the adjacent haemorrhagic pancreatitis. No further exploration in this region was undertaken because of the risk of further bleeding. The small bowel and descending colon were normal. However, the transverse and ascending colon appeared necrotic necessitating right hemicolectomy. Technically this was difficult due to the greatly thickened mesocolon also involved in the extensive inflammatory process. Post-operatively she had a stormy recovery and required drainage of a large wound abscess. She was discharged at three weeks and six months later remains asymptomatic with no evidence of colonic dysfunction or pancreatic insufficiency.

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Examination of the resected colon revealed multiple areas of haemorrhagic necrosis and saponification in the mesocolon and subserosal surface of the bowel consistent with involvement from an adjacent pancreatitis. Although thrombosis occurred within several small vessels, the major vessels remained patent. There was no evidence of necrosis or ulceration in the muscle coat, submucosa or mucosa of the bowel.

DISCUSSION

Arterial haemorrhage is a recognised complication following pancreatitis. Its occurrence in association with pseudo-cyst and abscess formation have been reported.[1, 2] Recently, uncomplicated massive intra-peritoneal arterial haemorrhage was described by Lawrie.[3] A comprehensive search of the literature revealed only one case of massive venous haemorrhage occurring in relation to a pancreatic abscess. The reported case is unusual in that venous haemorrhage occurred three days after the onset of haemorrhagic pancreatitis, presumably of traumatic origin. Slow enzymatic erosion of the omental vessel wall or initial thrombosis of the bleeding vessel may explain the delay in onset.

Colonic involvement following pancreatitis has been described. Complications of stenosis, necrosis, spasm and fistula formation have been reported.[4, 5, 6, 7] The mechanism by which these complications arise is not clear. Meyers, Evans and Lukash[8, 9] subscribed to the theory that inflammation spreads from the pancreas between the layers of the transverse mesocolon, giving rise to pericolitis. In the case reported, trauma may have contributed to the appearances described.

This case is unusual in that, while laparotomy was life-saving, it might not have been necessary to resect the damaged area of bowel. We would suggest that those compelled to undertake laparotomy in the presence of acute pancreatitis should be aware of the possible findings. Fortunately this situation does not often arise as the treatment of pancreatitis in this country is mainly conservative. If laparotomy is performed and the surgeon is confronted with what appears to be a necrotic colon, palpation of the mesenteric vessels and careful inspection of the bowel for signs of viability should be undertaken. If doubt still exists, then endoscopic inspection of the mucosa via an enterotomy might be performed.

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